

A Review of *Entering Research: A Facilitator's Manual*
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Entering Research: A Facilitator's Manual; 1st ed.; Janet Branchaw, Christine Pfund, and Raelyn Rediske; (2010). W.H. Freeman and Company, New York. 284 pages.

This book is sub-titled “Workshops for Students Beginning Research in Science,” which is a very apt description of the overall work. It describes, in great detail, a two-semester workshop for undergraduate students who are starting a research experience. The first workshop focuses on students who are seeking research opportunities and just entering the research laboratory. The second workshop focuses on more advanced topics for students who are engaged in research, such as communication of results, writing for the general public, and research ethics.

The book provides all the information that a faculty member needs to facilitate the workshops. Each chapter is organized as a single class meeting during the semester and

includes all the information needed to prepare for and execute the meeting, including student assignments. All assignments and class activities are given in the text of the book (electronic versions are available for download at the publisher's website; registration required). The book also includes a full sample syllabus for each semester in the Appendix.

Having worked with undergraduates as a research mentor, I find that the workshops described in this book are very comprehensive in identifying and working through common issues experienced by undergraduates who are new to research. In Part I, the authors focus on facilitating the selection of research mentors, understanding research groups, and setting expectations with the mentor. These are important tasks that will help acquaint new researchers with the dynamics of working in a research group and are ones that are all too often not explicitly discussed when undergraduates first enter the laboratory. Other necessary skills such as searching for and reading scientific articles, documenting research, and designing experiments are also included in this section. It is important to note that this information is not delivered as a set of lessons organized by an instructor, but is instead shared by the participating students as they experience and reflect upon the assignments and their research activities during the weekly class meetings. The importance of the instructor facilitating the process, rather than simply teaching the skills, is underscored by Appendix I, "Facilitating, Not Teaching: Some Practical Tips".

The second semester workshop continues the practice of combining experiences and assignments to guide student learning. I found the assignments and readings described in the second portion of the workshops to be well-designed to assist students as they move further into their research projects and prepare for dissemination of results.

While the detailed week-by-week schedule and description of workshop activities might seem to lead to an overly-proscriptive approach, I felt that the authors did an admirable job of providing an easy-to-follow blueprint that is also quite flexible. Throughout the work, the authors identify optional assignments that might be incorporated, as well as alternate approaches that might be employed in given circumstances. In the Appendix, they provide not only a traditional semester-based syllabus for each of the workshops, but also an alternative ten-week summer syllabus and a one-day workshop agenda that could utilize portions of the material from the book. They also provide a syllabus to coordinate workshop activities with the previously published *Entering Mentoring: A Seminar to Train a New Generation of Scientists* (Hilary Handelsman, ed; The Wisconsin Program for Scientific Teaching; 2005). I would note that there are no sample syllabi for instructors teaching in the quarter system.

Overall, I found many useful ideas in this book that I can use with beginning undergraduate researchers at my institution, whether it is through a course such as that described by the authors or in association with workshops or research experience programs. This is an excellent manual

for anyone who plans to assist groups of new undergraduates as they begin the research experience.

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